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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/666,860
Filing Date: September 17, 2003
Appellant(s): TSUKAMOTO ET AL.

Travis Dodd
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/18/2009 and a Reply Brief filed 4/5/2010
appealing from the Office action mailed 6/6/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 3510353	McHenry	5-1970
US 4863815	Chang	9-1989

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US 4476624	Klein	10-1984
US 6387561	Nemoto	5-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 20-28,67,78,79,80-83 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 69-73 and 76-79 of copending Application No. 10/665440. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 69-73 and 76-79 of the copending application contain all the limitations of claims of the instant application. Claims 20-28,67,78,79,80-83 of the instant application therefore are not

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patently distinct from the copending claim and as such is unpatentable for obvious-type double patenting.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20, 22-25, 67, 78-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry (US 3510353).

Refer to the Figure of McHenry. McHenry discloses a method of constructing an electric storage battery, comprising connecting a first end of a first electrode strip (17) to a pin (14); positioning a mandrel (tube 12 and the plastic tubing 13) on the pin; winding the first electrode strip together with a second electrode strip so as to form a spiral roll having at least a portion of the pin within the spiral roll, the spiral roll being formed after positioning the mandrel on the pin (2:31-36). The electrodes are rolled around the pin and the mandril (2:35-36).

Regarding claim 22, the plastic tubing 13 is in physical contact with the pin 14, and thus the mandrel is in electrical communication with the pin.

Regarding claim 24, McHenry discloses an end cap (16) is positioned on the pin (14), the end cap being configured to serve as a cap for a battery case, the end cap including an electrical insulator (15), the pin extending through the insulator.

Regarding claim 25, the end cap includes a conductive member (11) (2:11-15). The cap (11) connects the conductive member to a case (21) such that the conducting member is in electrical communication with the case and the pin extends into an interior of the case.

The tube 12 is crimped at several positions along its length to effect the seal between the wire and the tube 12 (applicant's claim 67) (2:20-22).

Regarding claims 78 and 79, refer to the pin (14) and a mandrel (12 and 13) in the figure.

Regarding claim 81, a sleeve 13 is inserted in the metal tube and the positive electrode wire contact 14 fits within the plastic tubing (2:17-18).

Regarding claim 20, the electrode and a pin are in communication via the tab 18. McHenry does not disclose that the first electrode and the second electrode are wound together after providing electrical communication between the first electrode and the pin (Applicant's claim 20). McHenry discloses that the electrodes are placed around the crimped tube. The wire is then bent and attached to the tab (18) (2:61-63). The process as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because the courts have upheld that the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. *In re Burhans*, 154 F2d. 690, 69 USPQ 330 (CCPA 1946). It is

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noted that absent specific limitation regarding which portion of the winding process the electrical communication is made between the first electrode and the pin, it would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the tab after being partially wound or fully wound because either method would achieve the connection between the electrode and the pin, and such a selection of any order of the process is prima facie obvious.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry (US 3510353) as applied to claim 20, in view of Chang (US 4863815).

McHenry discloses all the elements of claim 20 and are incorporated herein. McHenry discloses that the pin extends through the insulator 15, but does not disclose that the pin extends through the case. Chang teaches an electrically conductive terminal pin extending through battery lid (see 6 in fig. 1). It would have been obvious to one of ordinary skill in the art to extend the terminal pin through the end cap of the battery of McHenry, as taught by Chang, for the benefit of extracting the current of the battery directly from the current collector instead of through the positive terminal.

Claims 27,80,83 are rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry (US 3510353) as applied to claim 20, in view of Klein (US 4476624)

McHenry discloses all the elements of claim 20 and are incorporated herein. McHenry discloses a pin and a mandrel but does not disclose that the mandrel includes a tube with a slot in the tube; and winding the first electrode strip together with

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the second electrode strip includes inserting a drive key into slot, and employing the drive key to rotate the mandrel and the pin (claim 27). Klein teaches a novel mandrel comprised of an elongated longitudinally deformed metal strip and a compression element adapted to fit within the deformity of the metal strip. Preferably the metal strip is of a uniform enclosing configuration such as of a "U" or "C" shaped cross section and the compression element is preferably a solid plastic rod (applicant's claim 27 and 83). During the construction of the cell an electrode such as lithium with separator elements on both sides thereof is placed within the deformity with the compression element compressing and fixedly positioning the electrode into the deformity of the mandrel. The compression element is then locked into position such as by crimping the mandrel therearound to positively hold the electrode in place during subsequent winding (applicant's claim 67). With an anode metal electrode such as of lithium, a percut opening in the separator element adjacent the mandrel permits contact and cold welding between the anode metal and the mandrel during the compression step. Refer to 1:65-2:5). Klein teaches that It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the mandrel of McHenry, a u- or a c-shape, as taught by Klein (1:36-37), for the benefit of tightly gripping the electrode during the winding of the battery.

McHenry discloses that the pin is inserted into the mandrel, but does not disclose that the mandrel slides onto the pin (applicant's claim 80). Klein teaches that an inserting element 20 (or pin) is lowered (or inserted) into the mandrel 10 (2:55-57). It would have been obvious to one of ordinary skill in the art at the time the invention was

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made to lower the pin into the mandrel of McHenry, as taught by Klein, for the benefit of easily inserting the pin into the mandrel.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over McHenry (US 3510353) as applied to claim 20, in view of Nemoto (US 6387561).

McHenry discloses all the elements of claim 20 and are incorporated herein. McHenry does not disclose that the mandrel includes a channel and injecting an electrolyte through the channel. Nemoto teaches that the electrolyte is injected through the hole 7 of the core 6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to inject the electrolyte of McHenry through a hole through the core of the battery, as taught by Nemoto, for the benefit of distributing the electrolyte from the center. Distributing the electrolyte from the center of the battery would allow for even distribution of the electrolyte in a cylindrical can.

Allowable Subject Matter

Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Closest prior arts are McHenry and Klein. Neither prior arts disclose “welding mandrel to the pin”. The mandrel and pin of McHenry are not welded because the pin is made of metal and the mandrel 13 is a plastic sleeve. The mandrel and pin of McHenry

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are not welded because the mandrel is the anode terminal and the pin is formed of plastic.

(10) Response to Argument

Response to Arguments filed 11/18/2009:

*Applicant argues that McHenry discloses providing electrical communication between an electrode strip 17 and a pin 14 **after** winding electrode strips 17 together around the tube 12 (emphasis in original).*

McHenry discloses that the electrode and a pin are in communication via the tab 18. McHenry does not disclose that the first electrode and the second electrode are wound together after providing electrical communication between the first electrode and the pin (Applicant's claim 20). McHenry discloses that the electrodes are placed around the crimped tube. The wire is then bent and attached to the tab (18) (2:61-63). It is noted that absent specific limitation regarding which portion of the winding process the electrical communication is made between the first electrode and the pin, it would have been obvious to one of ordinary skill in the art at the time the invention was made to electrically connect the strip and the pin by attaching the tab to the strip before being partially wound or fully wound because either method would achieve the connection between the electrode and the pin, and such a selection of any order of the process is prima facie obvious. The process as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because the courts have upheld that the selection of any order of performing process steps is prima facie obvious

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in the absence of new or unexpected results. *In re Burhans*, 154 F2d. 690, 69 USPQ 330 (CCPA 1946).

Response to Arguments filed 4/5/2010:

Applicant argues the claimed invention would not be achieved by the combination of references as shown by Diagrams A and B. In Diagram A, the Applicant states that the location of the interior rolls is labeled "Interior rolls formed in here." McHenry teaches that the battery is formed by winding the electrodes around the wire 14 (C2, L35-36). However, if the electrodes in the above diagram are wound around the wire 14, none of these interior rolls would result. Further, there is nothing in McHenry teaching how these interior rolls could be formed after attaching the tab 18 to the wire 14. In fact, this is the issue raised in the argument that a person of skill in the art would experience difficulty making the proposed modification. In Diagram B, there are portions of the positive electrode 17 that are adjacent to another portion of the positive electrode 17 without an intervening portion of the negative electrode 19. There are also portions of the negative electrode 19 that are adjacent to one another without an intervening portion of the positive electrode 17. Such a structure contradicts traditional battery where positive electrodes alternate with negative electrodes. Further, such a structure contradicts the structure taught in McHenry which also alternates positive and negative electrodes (Pgs 4-5 of Reply Brief).

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In response, it appears that the Applicant has misunderstood the Examiner's position of the prior art. To further clarify, the Examiner notes that claim 20 recites that "the first electrode strip and the second electrode strip being wound together after providing electrical communication between the first electrode strip and the pin", and does not recite that "the first electrode strip and the second electrode strip being fully wound together after providing electrical communication between the first electrode strip and the pin".

As stated in the rejection, it is noted that absent specific limitation regarding which portion of the winding process the electrical communication is made between the first electrode and the pin, it would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the tab after being partially wound or fully wound because either method would achieve the connection between the electrode and the pin, and such a selection of any order of the process is prima facie obvious.

Since the claim does not specifically recite regarding which portion of the winding process the electrical communication is made between the first electrode and the pin, the winding of the prior art battery would entail 1) winding the interior portion of the electrode roll up to the point of the positive tab 18, 2) electrically connect tab 18 to the pin, and then 3) finish winding the roll. It is noted that electrically connecting tab 18 to the pin **during** the winding process would read on Applicant's "the first electrode strip and the second electrode strip being wound together after providing electrical communication between the first electrode strip and the pin" since the interior portion of the roll would be wound first before the electrical communication is made.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Cynthia Lee/

Examiner, Art Unit 1795

Conferees:

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795

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Quality Assurance Specialist, TC 1700